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DYNOIDES DENTISINUS, FROM THE COAST
OF NORTH CHINA

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等足類之新種

沈嘉瑞

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北平靜生生物調查所印行

DESCRIPTION OF A NEW ISOPOD, DYNOIDES DENTISINUS, FROM THE COAST OF NORTH CHINA

By C. J. SHEN

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Through the courtesy of Mr. Sohtsu G. King I have the opportunity to examine the Crustacea he collected from Peitaiho in the Summer, 1926. In this material I found an adult male Isopod specimen belonging to the family Sphaeromidae. Under close examination, it was found that this form was probably unknown. The same form was afterwards also collected by myself in the Summer, 1929, in Peitaiho, Chefoo, Tengchow and Tsingtao. This animal was found very rare in occurrence, as I could find only a small number at each locality. It was found on the rocky shore below the tidal mark among a kind of green algae (*Enteromorpha* sp.) and certain littoral fauna such as small Barnacles (*Balanus* sp.), young Mollusca (*Modiola atrata* Lischke, *Littorina balteata* Reeve), Sea Anemones and some species of Bryozoa. It could swim on its back and dart in water with considerable agility.

This form is placed with the genus *Dynoides* of Barnard (1914) as its main features agree with his description. Through the detail study of its external morphology many interesting characters have been revealed that it could not be identified with Barnard's species, *D. serratisinus* which is the only species of this genus so far as record shows. It is considered that this form in question is a new species for which I propose the name *Dynoides dentisinus*.

I am very much indebted to Drs. Willard G. Van Name, Walter E. Collinge and J. O. Malony for their kindness in giving me various kinds of advice and help. My thanks are also due to Dr. C. Ping for his supervision throughout this work and to Mr. Chen-Ru Feng for his courtesy in making the drawings for me.

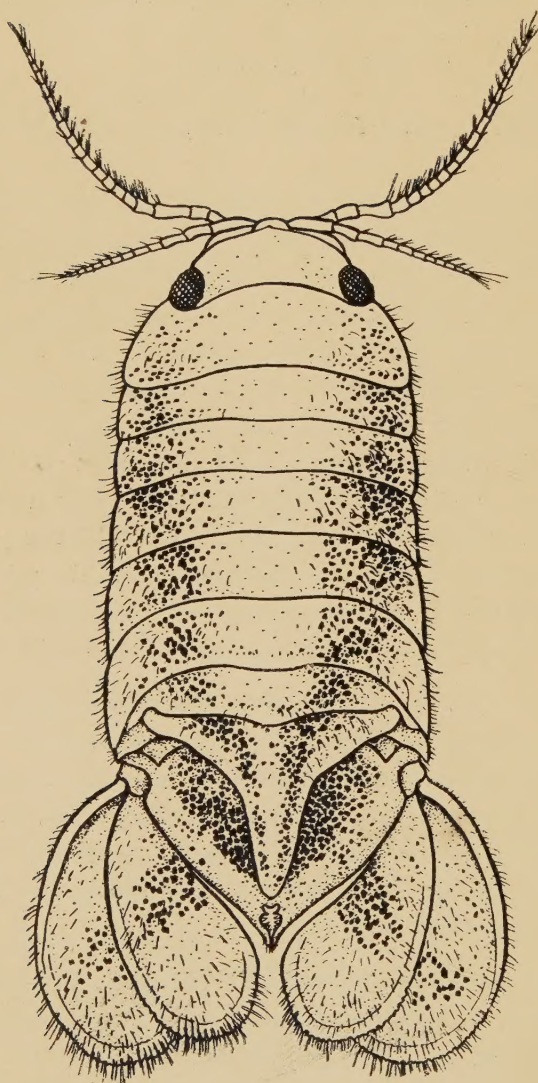
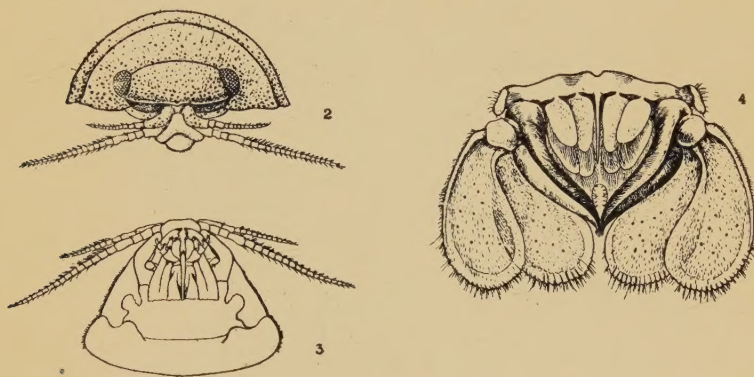


Figure I. *Dynoides dentisinus* Shen, 1929. Dorsal view of male, $\times 23 \frac{1}{3}$.

***Dynoides dentisinus* Shen sp. nov.**

(Figures 1—23 incl.)

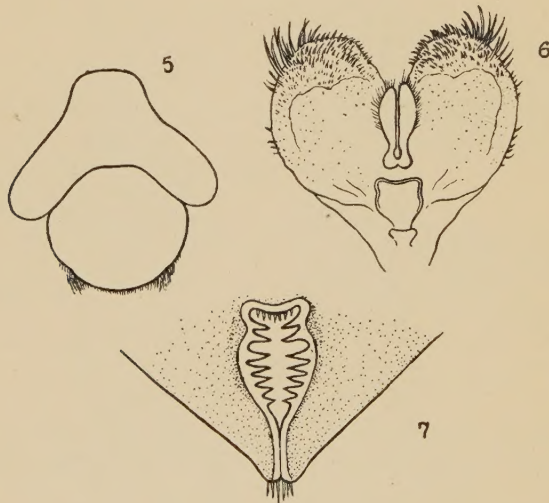
Body elongated oval, greatest breadth about half the length of body, dorsal surface strongly convex with fine setules and minute granules, granulations becoming larger and more conspicuous on segments of pleon and uropoda, setules being thickest on the epimera. Cephalon broader than long, antero-lateral margins slightly produced over a narrow transverse furrow when seen from front and with its antero-median portion extended into a small process. Compound eyes prominent with numerous rounded ommatidia and



Figures 2-4, *Dynoides dentisinus* Shen, 1929. 2, front view of head, $\times 12\frac{1}{2}$. 3, Ventral view of head, $\times 10\frac{1}{2}$. 4, ventral view of pleon, $\times 12\frac{5}{6}$.

situated postero-laterally. Peraeon with first segment longer than any of the following ones which all subequal in length, in segments two to seven inclusive, each postero-lateral angle produced more and more posteriorly, sixth segment reaching as far back as to overlap the lateral parts of its following segment, seventh segment with lateral margins depressed and extending posteriorly, posterior margin slightly convex. Pleon with posterior margin of third segment produced into a large, triangular, conical process pointed posteriorly and elevated over telson. Behind each lateral angle of this process two fused triangular

pieces bearing obliquely transverse faint sutures indicating of close connection between fourth, fifth segments and telson. Telson trianguloid in shape, very convex in center, where it is covered with scattered coarse granules; near the margins and especially at the apex, it is flat; apex pointed, with an ovate foramen and a narrow slit, foramen with a small triangular median lobe on anterior border and seven obliquely dorsally pointed acute teeth on each lateral border. While in the species *D. serratisinus* only a deep parallel-sided, serrated slit at the apex. Median lobe and each posterior tip of telson in the present species are setulose.

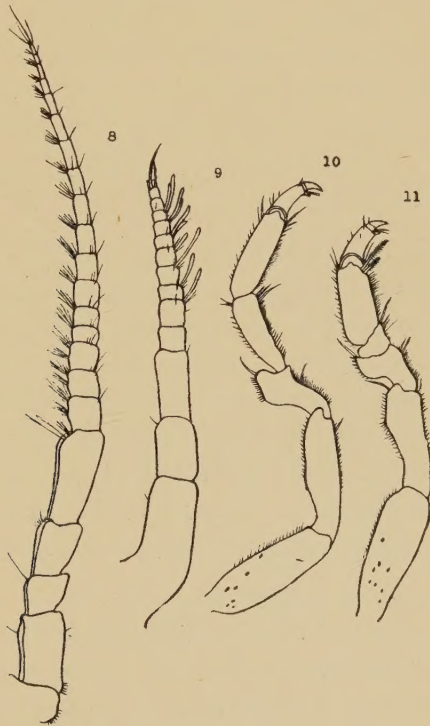


Figures 5-7, *Dynoides dentisinus* Shen, 1929. 5, ventral view of epistome and labrum, $\times 47$. 6, ventral view of labium, $\times 75$. 7, dorsal view of posterior part of telson, much enlarged.

Antennulae reaching about eighth joint of the flagellum of antenna, first peduncular joint long, stout and somewhat curved at its basal portion, second about half as long as first, these two joints slightly grooved on lateral surface to receive the projected part of head when laterally reflexed, third joint longer and much slender than second; flagel-

lum ten-jointed, second to eighth joints inclusive, each bearing laterally prominent sensory hairs, last joint bearing terminally two long setae.

Antennae reaching postero-lateral angle of fourth segment of peraeon when reflected back, first peduncular joint short, second twice as long as first, third and fourth as long as first two taken together, fifth longest and broad at its distal end and much narrower at its base; flagellum seventeen-jointed, each with an apical tuft of setae.



Figures 8-11, *Dynoides dentisinus* Shen, 1929. 8, left antenna, $\times 40$. 9, left antennula, $\times 46$. 10, left second leg, $\times 38$. 11, left first leg, $\times 38$.

Labrum more or less rounded in outline and setose on its free margin.

Epistome, of inverted V shape, distance from proximal margin to base of labrum about two-thirds the breadth across the arms, proximal end and each end of arms rounded, sides slightly concave.

Labium, lobes regularly rounded, distal portion strongly setose. Two small elongated median lobes situated between them, each is setose on antero-lateral surface.

Mandibles large and strong with a rounded prominence shortly posterior to molar process which is highly ridged, cutting edge colored dark brown. Palp three-jointed, first joint stout, second and third slender; first and second subequal in length, third a little longer; two long setae on ventro-distal margin of second, ventral margin of third with gradually lengthening plumose setae. In left mandible, outer cutting edge entire, without indication of division into teeth, spine row with about four spines curving towards the molar process. Right mandible is similar to left, except its outer cutting edge with indication of division into three teeth.

First maxillae, outer plate bearing terminally about nine spines, of which the outer ones are larger and dark brown, three inner ones slender and finely serrated along inner margin; inner plate delicate, membranous, terminally bearing four long plumose setae and a small one at its tip. In the specimen collected by Mr. S. G. King, the outer plate of the left first maxilla bearing about twelve spines terminally shown in fig. 15. It is quite different from the present specimen. According to Collinge (1914), there is, however, a very considerable variation in the oral appendages of many Terrestrial Isopoda.

Second maxillae membranous, inner plate broad with inner margin irregularly rounded, bearing simple setae, its broadly rounded tip bearing about eight long plumose setae, of which, one of those pointing medially is the longest; two narrow outer plates each bearing about four long serrated spines.

Maxillipedes elongated, first joint short, second joint with outer and inner margins almost parallel, outer margin setulose, third joint short, fourth joint long and wide but narrowing toward its base, fifth joint about one-third the length of fourth, sixth joint more slender but longer than fifth, last joint still more slender and little shorter than sixth; fourth, fifth and sixth joints all setose on their antero-medially

produced lobes, and sixth armed with another long spine at its latero-distal end, last setose terminally. Inner plate about half the length of second joint, apex rounded with plumose setae, inner margin setulose and with a sensory process (coupling hook).

Peraeopods, all biunguiculate and ambulatory; anterior ones somewhat shorter than posterior, first pair with both dorsal and ventral margins of all joints setulose, ventral margins more strongly so than dorsal, basipodite frequently with some dark spots, ischiopodite with a spine near ventro-distal end and a long spine at dorso-distal,



Figures 12-17, *Dynoides dentisimus* Shen, 1929. 12, ventral view of left mandible, $\times 40$. 13, ventral view of the terminal portion of right mandible, much enlarged. 14, ventral view of the outer and inner plates of left first maxilla, $\times 46$. 15, ventral view of the terminal portion of the inner and outer plates of left first maxilla, much enlarged. 16, ventral view of right second maxilla, $\times 94$. 17, dorsal view of left maxilliped, $\times 44$.

meropodite with two spines near ventro-distal and a stout and long spine at dorso-distal, carpopodite armed ventrally with a long and two short setae, propodite with two plumose setae near ventro-distal end;

second pair more slender but longer than first, propodite without plumose setae. The succeeding pairs are nearly similar in shape.

Male Appendage on seventh peraeon segment with its main portion straight and somewhat prismatic; its basal third bearing two nodules on both sides; near its distal third the appendage itself expanding into two flaps projecting ventro-medially and almost meeting each other with their free convex margins, and each of the flaps having its outer surface slightly depressed and dividing into two slender tapering portions with short setae on latero-ventral surfaces.



Figures 18-19, *Dynoides dentisinus* Shen, 1929. 18, ventral view of left first pleopod, $\times 54\frac{1}{2}$. 19, ventral view of male appendage, $\times 65$.

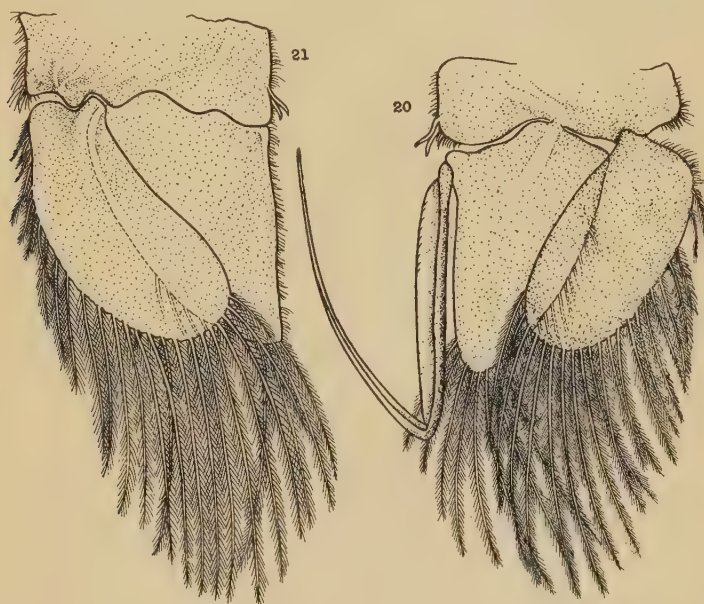
First pleopod with outer ramus oblong ovate in shape and a stout spine near latero-basal portion, inner ramus conical. Both rami with long plumose marginal setae. Male appendage usually placed between first pair of pleopods.

Second pleopod with outer ramus similar in general shape to that of the first but without spine, inner ramus with a male stylet

reaching beyond distal margin, then turning upwards and tapering acutely.

Third pleopod nearly similar in general shape to the first and second. Outer ramus unjointed. Each of these first three pairs bearing two vermiform spines on inner apex of peduncle.

Fourth pleopod with outer ramus two-jointed, heart-shaped and membranous, inner ramus fleshy with deep transverse branchial



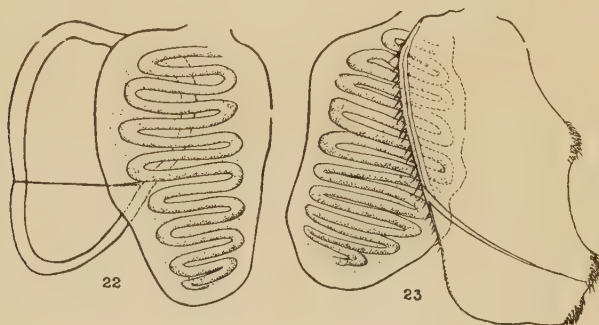
Figures 20-21, *Dynoides dentisinus* Shen, 1929. 20, ventral view of left second pleopod, $\times 53$. 21, ventral view of right third pleopod, $\times 50$.

folds. Both rami without plumose marginal setae.

Fifth pleopod with outer ramus two-jointed and serrated on outer margin, three convex portions on inner margin, of which each is covered thickly with short setae, inner ramus convex at two portions also on inner margin which can be fitted into the larger curvature of outer ramus when these two rami are placed one upon the other.

Uropoda pyriform in outline, very much expanded, extending some distance beyond telson, crenulated around posterior round margins. Outer margin of outer ramus setose, thickened and forming a flange which comes to contact with the outer margin of inner ramus when these two rami are closely placed together. Inner ramus immovable, lying close to the thickened margin of telson.

Color: Yellowish grey to brownish, with dark dots scattered on dorsal surface, occasionally with black markings along median line. Appendages yellowish white.



Figures 22-23, *Dynoides dentisinus* Shen, 1929. 22, dorsal view of left fourth pleopod, $\times 42$. 23, ventral view of right fifth pleopod, $\times 52$.

Female unknown.

Type: Male, length 4.8 mm.; breadth 2.4 mm. F. M. I. B. No. 1020.

Type locality: Peitaiho, Hopei province.

Distribution: Pechihli Bay to Tsingtao. Rocky shore, low-tide.

Materials examined: 1 male (F. M. I. B. No. 1024); Peitaiho; July, 1926; Coll. S. G. King. 1 male (F. M. I. B. No. 1020); Peitaiho; June 10, 1929; Coll. C. J. Shen. 2 adult males (F. M. I. B. No. 1019); Peitaiho; June 14, 1928; Coll. C. J. Shen. 1 adult male (F. M. I. B. No. 1021); Chefoo; July 14, 1929; Coll. C. J. Shen. 1

adult male (F. M. I. B. No. 1022); Chefoo; July 16, 1929; Coll. C. J. Shen. 1 adult male (F. M. I. B. No. 1023); Tengchow; August 5, 1929; Coll. C. J. Shen. 1 adult male (F. M. I. B. No. 1024); Tsingtao; August 16, 1929; Coll. C. Chang.

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FEB 14 1983

等足類之新種

去年十月，當本所成立之際，曾蒙金叔初先生之熱心贊助，以其北戴河採得之無脊椎動物標本，全數贈與本所。在清理之中，得一雄性等足類動物標本，屬於 *Sphaeromidae* 科，狀與已經記載者不同，質之於美國天產博物院 (*American Museum of Natural History*) 文納姆博士 (Dr. Willard G. Van Name)，方知其為新種無疑。

今夏在北戴河，烟台，登州，青島等海岸採集，幸於每處又得一，二枚。此新種產於海岸岩石間，為數甚少，其環境中，常有綠藻，藤壺，螺，海菊花及蘚苔蟲等。在水中游行，其背時向下，進行極速。

Dynoides 屬，至今祇有一種，*D. Serratisinus* Barnard 1914，產於南非洲 (Port Shepstone, Natal)。此新種之形態，與之相近，惟最顯著之異點，此新種腹節近末端處，有一卵形之孔，孔之前緣，有一唇狀突起，其左右內緣，各有大小七齒，斜向上，孔之後，連一極狹細之裂縫。腹部第三節向後伸長如手指狀，其基部左右兩角之後，各有腹部第四，第五兩節凝合之痕跡，尾足內外肢之下緣，有齒狀缺刻。文納姆博士謂此二種歸附於 *Dynoides* 屬中，正好介於半腮類 (*Hemibranchiatæ*) 與真腮類 (*Eubbranchiatæ*) 之間云云。

Dynoides dentisinus Shen sp. nov.

體長而卵形；背部有細點，短毛及黑斑；複眼突出，位于頭之後部左右側。(第1圖)。

胸部 (*peraeon*) 第六節最寬，左右二側，向後伸長，蓋於第七節兩側之前半部。(第1圖)。

腹部 (*pleon*) 第三節，伸長如手指狀，第四，第五兩節留有凝合之痕跡。(第1圖)。

尾節 (*Telson*) 隆起，背部細粒點多，其末端有卵形孔及細裂縫，其極端有三，四短毛(第7圖)。

第一觸角 (*Antennule*) 基部分三節，鞭毛部分十節(第9圖)。

第二觸角 (*Antenna*) 基部分五節，鞭毛部分十七節(第8圖)。

顎足 (*maxillipedes*) 之內側，有一指狀感覺器，第四，五，六節之末端向內凸出(第17圖)。

胸足 (*Pereopods*) 之居前者較後者為短(第10-11圖)。

腹足 (*Pleopods*) 第二對之內側，附有雄性肢(第20圖)，第三對之外肢，祇有一節(第21圖)。第四，五對之外肢，呈膜狀，分二節，內肢呈肉狀，有腮管橫轉其中(第22-23圖)。

尾足 (*Uropoda*) 之內外肢，形狀，大小，頗相似，伸出於尾節之後。外肢之外緣，較厚，成一突緣，外肢能移疊於內肢之下，內肢不能移動，貼近於尾節，內外肢之下緣，有齒狀缺刻及短毛(第4圖)。

Type, 體長 4.8 mm. 寬 2.5 mm.

色，淡黃，變異多，且常帶黑斑。

產地：北戴河，烟台，登州，青島。

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